Quant Lit Midterm:

Summary statistics on opinions about the middle class:

Min: 0

Max: 100

Mean: 77

Median: 85

Standard Deviation: 17.6

The descriptive statistics above are saying that the minimum someone chose was 0, and the maximum was 100, so there are people that really approve of the middles class, and people who really dislike the middle class. The mean states that on average, people are 77% inclined to the middle class. The median is 85, meaning that the middle of the data is 85. Since the median is higher than the mean, it may show that there could possibly be outliers near the lower end of the data, thereby bringing the mean lower than it would be. The standard deviation states the norms for a data set, in this case the standard deviation is 17.6, meaning that any scores either above or below the mean is standard, or normal, so anywhere from 59.4 to 94.6 would be normal.

Summary Statistics on opinions about the working class:

Min: 1

Max: 100

Mean: 83.97

Median: 85

Standard Deviation: 16.5

The statistics above show that the opinions about the working class vary from a score of 1 to a score of 100. The mean of 83.97 shows that on average people hold the working class pretty positively in their minds, with a score of 84 out of 100. Since the median is fairly close to the mean that shows that the average score is very close to the perfect middle of all the data, indicating that both scores are probably on point. The standard deviation in this data set means that any scores between 67.4 and 100 are considered normal.

Descriptive statistics chart:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Variable | Min | Max | Median | Mean | SD |
| midclass | 0 | 100 | 85 | 77 | 17.6 |
| workclass | 1 | 100 | 85 | 83.9 | 16.5 |
| welfareppl | 0 | 100 | 50 | 56.7 | 21.4 |
| bigbiz | 0 | 100 | 50 | 55.27 | 22.5 |

Box plots:

boxplot midclass workclass bigbiz welfareppl.eps

This graph is merely four different box plots all lined up in a row. The middle class data is in magenta, the working class data in green, big business data in cyan, and the opinions of people on welfare are in red. These plots show the median (solid lines in the boxes), both quartiles (ends of boxes), as well as the maximum and minimum values (end of dashed lines), and any values considered outliers (dots outside of dotted lines). These box plots can give the general idea of the layout of data, where the bulk of the data lies.

Violin plots:

violinplot midclass workclass bigbiz welfareppl.eps

The violin plots above serve the same general purpose as the box plots, however, the waves of the graphs allow us to see the distribution of the data, or its density, allowing us to see where the number of data grows and shrinks, the larger the wave, the more answers. For example, judging from these violin plots, we can see that a large amount of people chose high values when it comes to their opinions of the working class.

Scatterplots:

scatterplot midclass big biz.eps

scatterplot midclass welfareppl.eps+

scatterplot workclass bigbiz.eps

scatterplot workclass welfareppl.eps

scatterplot workclass midclass.eps

The Scatter plots above place two variables alongside different axis in order to see the correlation (or lack thereof) between the two variables. The scatter plots are those that compare the opinions concerning the middle class, and those of big business (with a correlation coefficient of .22), opinions on the middle class and people on welfare (with a correlation coefficient of .25), the opinions on working class people and big business (with a correlation coefficient of .19), the opinions on the working class and people on welfare (with a correlation coefficient of .19), and finally the opinions on the working class and the middle class (with a correlation coefficient of .58). All of the correlation coefficients are positive, meaning that as the opinions of one of the variables increases, so do the opinions on the other variable, whether it be between the working class and big business, or the middle class and people on welfare. Nearly all of these correlations represent either weak relationships or no relationships, essentially meaning that the correlation is very low, or could even be merely happening by chance. The only two variables that have even a moderate relationship is the positive correlation coefficient between people’s views on the middle class and the working class, which has a moderately positive relationship at .58.

Histogram:

back to back histogram.eps

This histogram shows the back to back dispersion of the middle class and working class answers. This can be used to directly compare the dispersion of these two ratings. From this back to back histogram we can see that the middle class had more lower scores than the working class did.